Publications and Presentations

Books

I am in the early stages of developing a text based on my SIGGRAPH course series; I am currently negotiating with the publisher. The tentative title is Building Compelling Virtual Worlds. The book is directed both at the academic virtual environments community and the computer gaming / design industry.

Refereed journal papers/cases

[J1] **Capps, M.**, Ladd, B., and Stotts, D. (1996) "Enhanced Graph Models on the Web: Multi-Client, Multi-Head, Multi-Tail Browsing." Computer Networks and ISDN Systems, 28, pp. 1105—1112.

Refereed conference papers

[C1] Zeleznik, R., Holden, L., **Capps, M.**, Abrams, H., Miller, T. (2000). "Collaboration between Heterogeneous Stand-alone 3-D Graphical Applications." Proceedings of Eurographics 2000, Interlaken, Switzerland, August 2000.

[C2] **Capps, M.** "The QUICK Framework for Task-Specific Asset Prioritization in Distributed Virtual Environments." Proceedings of IEEE Virtual Reality 2000, East Rutherford, NJ, March 2000.

[C3] Watsen, K., Darken, R.P., & **Capps, M.** (1999). "A Handheld Computer as an Interaction Device to a Virtual Environment." Proceedings of the Immersive Projection Technology Workshop, Stuttgart, Germany, May 1999.

[C4] Teichmann, M. & **Capps, M.** (1998) "Geometric Reconstruction with Anisotropic Alpha Shapes." Proceedings of IEEE Visualization '98, Research Triangle Park, NC, November 1998.

[C5] **Capps, M.** & Teller, S. (1997) "Communications Visibility in Shared Virtual Worlds." Proceedings of the Sixth Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (IEEE WET-ICE '97), Cambridge, MA, June 1997, pp. 187-192.

[C6] Ladd, B., **Capps, M.**, & Stotts, D. (1997) "WWW: What Cost Simplicity?" 1997 ACM European Conference on Hypertext, Southampton, England, April 1997.

[C7] Duff, J., Purtilo, J., **Capps, M.**, & Stotts, D. (1996) "Software Engineering of Distributed Simulation Environments." Proceedings of the Fifth Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (IEEE WET-ICE '96), Stanford, California, June 1996.

[C8] **Capps, M.**, Ladd, B., & Stotts, D. "Educational Applications of Multi-Client Synchronization through Improved Web Graph Semantics." <u>Proceedings of the Fifth Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (IEEE WET-ICE '96)</u>, Stanford, California, June 1996.

[C9] **Capps, M.**, Ladd, B., & Stotts, D. "Enhanced Graph Models in the Web: Multi-client, Multi-head, Multi-tail Browsing." <u>Proceedings of the 5th Annual World Wide Web Conference</u>, Paris, France, May 1996.

[C10] **Capps, M.**, Stotts, D., Duff, J., & Purtilo, J. (1996) "Distributed Interoperable Virtual Environments." <u>Proceedings of the Third International IEEE Conference on Configurable Distributed Systems</u>, Annapolis, Maryland, May 6-8, 1996, pp. 202—209.

[C11] Ladd, B., **Capps, M.**, Stotts, D., & Furuta, R. (1995) "Multi-Head Multi-Tail Mosaic: Adding Parallel Automata Semantics to the Web." <u>Proceedings of the 4th Annual World Wide Web Conference</u>, Boston, MA, December 1995, pp. 433-440.

<u>Invited conference papers</u>

[C12] **Capps, M.** & Stotts, D. "Research Issues in Developing Networked Virtual Realities." <u>Proceedings of the Sixth Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (IEEE WET-ICE '97)</u>, Cambridge, MA, June 18-20, 1997, pp. 205—211.

<u>Presentations</u>

[P1] **Capps, M.**, Morie, J., Stapleton, C., & Zyda, M. (2001) "The Future of Networked Interactive Entertainment." Panel held at Virtual Systems and Multimedia 2001, Berkeley, CA, October 2001. Organizer, M. Zyda.

[P2] **Capps, M.**, Hiles, J. (2000, 2001) "The Army Game Project." Presented to Honorable Dr. White, Secretary of the Army. Monterey, CA, September 2001. Multiple presentations also made to Honorable P.T. Henry, Assistant Secretary of the Army; Honorable John McLaurin, Deputy Assistant Secretary of the Army; and MG George Cavin, Commanding General of US Army Recruiting Command.

[P3] **Capps, M.** (2001) "Defense-Entertainment Collaboration at the MOVES Institute." Presentation for MOVES Open House, Monterey, CA, September 2001.

[P4] **Capps, M.**, Loftin, B., Macedonia, M., & Thalmann, D. (2000) "The Future of Shared Virtual Environments." Panel held at IEEE Virtual Reality 2000, East Rutherford, NJ, March 2000. Proposed topic and served as moderator.

[P5] **Capps, M.** (2000) "Small- and Large-Scale Virtual Environments for Collaboration." NSF Graphics and Visualization Center, simulcast to Brown University, California Polytechnic Institute, Cornell University, University of North Carolina, and University of Utah. Pasadena, CA, February 3, 2000..

[P6] **Capps, M.**, (1999) "Small- and Large-scale Virtual Environments for Collaboration." Invited presentation at Fraunhofer Center for Research in Computer Graphics, Providence RI, December, 1999.

[P7] **Capps, M.** (1999) "Generic Scene Graph and Generic Graphics Protocol." Refereed demonstration and presentation, ACM SIGGRAPH, Los Angeles, CA, August 1999.

Refereed technical reports

[T1] **Capps, M.**, Pekkola, S., & Greenhalgh, C. (1998) "Systems Aspects of Sharing a Virtual Reality." SIGGROUP Bulletin, V. 19, #2.

Non-refereed technical reports

[T2] Duff, J., Purtilo, J., **Capps, M.**, & Stotts, D. "Software Engineering of Distributed Simulation Environments." University of Maryland Institute for Advanced Computer Studies, Department of Computer Science Tech Report CS-TR-3547 (also cross-referenced as UMIACS-TR-95-100), October 1995.

Published computer programs.

[S1] Naval Postgraduate School NPSNET Research Group. "NPSNET-V." NPSNET-V is a Java-based, networked, component-based, virtual reality application toolkit. I serve as technical and administrative lead of this project, which is sponsored by Navy N6 and the NRO. Software currently available at http://npsnet.org. Software under development 1999-.

[S2] Walt Disney Imagineering Virtual Reality Studio. "Toon-Town Massively-Multiplayer Online Game." Toon-Town is a children's game based upon the PANDA toolkit. I served as the technical consultant for networking design. Software is currently in Beta release, and will soon be available worldwide through the Disney Online website. Software under development 1999-.

[S3] Walt Disney Imagineering Virtual Reality Studio. "PANDA: Platform-Agnostic Networked Display Architecture." PANDA is a cross-platform, open-source, networked virtual reality architecture. I served as the technical consultant for the network design. Software currently available at http://panda3d.org. Software under development 1999-.

[S4] Brown University Graphics Group and Naval Postgraduate School NPSNET Research Group. "SOFT: SOftware Framework for Tele-immersion." I

served as technical and administrative lead of the NPS team on this collaborative project, sponsored by Advanced Network and Services. Software under development 1998-1999.

[S5] Naval Postgraduate School NPSNET Research Group. "Bamboo Virtual Environments Toolkit." Bamboo is a cross-platform, open-source, networked, component-based, virtual reality programming environment. I was a technical contributor to this project, which was funded by multiple sponsors. Software currently available at http://bamboo.org. Software under development 1997-.

[S6] University of North Carolina at Chapel Hill Collaboratory. "MMM: Multi-Head Multi-Tail Mosaic." MMM is a modified version of the Mosaic web browser that adds Petri net functionality to the web hypertext model. No server-side modifications are required; the MMM client can be downloaded from http://www.cs.unc.edu/~stotts. Software under development 1995-6.

Book reviews.

[R1] Review of Networked Virtual Environments by Singhal, S. & Zyda, M. Published by Addison Wesley / ACM Press, 1999.

Other publications.

Video documentary

[O1] "The Story of Computer Graphics." (1999) ACM SIGGRAPH. Selected as one of fifty pioneers in the field of computer graphics, specifically for contributions to networked virtual environments. Also contributed significantly to the movie production, including selecting video material and demonstrations for the field of virtual reality.

Articles

[O2] **Capps, M.**, McDowell, P., & Zyda, M. (2001) "A Future for Entertainment-Defense Research Collaboration." IEEE Computer Graphics & Applications, January/February 2001.

[O3] **Capps, M.**, McGregor, D., Brutzman, D., & Zyda, M. (2000) "NPSNET-V: A New Beginning for Virtual Environments." IEEE Computer Graphics & Applications, September/October 2000.

[O4] **Capps, M.**, Watsen, K. & Zyda, M. "Cyberspace and Mock Apple Pie: A Vision of the Future of Graphics and Virtual Environments," IEEE Computer Graphics & Applications, November/December 1999, pp. 8—11.